

TECHNICAL REVIEW DOCUMENT
for
MODIFICATION TO OPERATING PERMIT 96OPDE136

Public Service Co – Arapahoe Station
Denver County
Source ID 0310008

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Revised September 2003

I. Purpose:

This document establishes the decisions made regarding the requested modification to the Operating Permit for Public Service Company's Arapahoe Station. This document provides information describing the type of modification and the changes made to the permit as requested by the source and the changes made due to the Division's analysis. This document is designed for reference during review of the proposed permit by EPA and for future reference by the Division to aid in any additional permit modifications at this facility. The conclusions made in this report are based on the information provided in the request for modification submitted to the Division on June 27, 2003, the revised NO_x averaging plan submitted on December 11, 2002 and retirement unit exemption submitted on December 10, 2002, comments on the draft modified permit and technical review document received on September 22, 2003, e-mail correspondence and telephone conversations with the source. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Permit Modification Request/Modification Type

The Operating Permit for the Arapahoe Station was issued on December 1, 2001. Public Service Company (PSCo) entered into a Voluntary Emissions Reduction Agreement with the Colorado Air Pollution Control Division that applies to the Denver metro area plants. The agreement took effect on January 1, 2003. The purpose of this modification is to include the appropriate provisions of the Voluntary Emissions Reduction Agreement.

Since the provisions in the Voluntary Emissions Reduction Agreement are State-only requirements and since the agreement has gone through public comment and been approved by the Colorado Air Quality Control Commission (AQCC), the Division considers that adding the provisions of the Voluntary Emissions Reduction Agreement qualifies as a minor modification.

In addition, since Units 1 and 2 have been retired, as required by the Voluntary Emissions Reduction Agreements, the source has submitted a revised NO_x averaging plan and retired unit exemption forms for these units. As a result of these changes, the Acid Rain portion of the operating permit (Section III) must be revised. Notwithstanding the operating permit modification procedures, any changes to the Acid Rain portion of the permit are subject to the Acid Rain permit revision requirements in 40 CFR Part 72. 40 CFR Part 72 § 72.83(a)(13) specifies that the addition of an exemption (i.e. retired unit) may be processed as an administrative amendment. The Acid Rain permit revision procedures indicate that the addition of a NO_x averaging plan shall be processed under the typical modification procedures (i.e. 30-day public comment and 45-day EPA review) per § 72.81(b)(3), however they do not address revisions to an existing NO_x averaging plan. Under the administrative permit revisions procedures in 40 CFR Part 72 § 72.83(a)(14), the incorporation of those changes that are similar to the changes in §§ 72.83 (a)(1) thru (13) may be processed as an administrative amendment. Changes in substitution or reduced utilization plans that do not result in a new unit may be processed as an administrative amendment per § 72.83(a)(7), while changes in a substitution or reduced utilization plan that results in a new unit must be processed under the standard permit modification procedures per § 72.81(b)(2). Therefore, since the Arapahoe Acid Rain permit already includes a NO_x averaging plan and since the revision to the NO_x averaging plan does not result in the addition of any new unit to the plan, the Division considers that the revisions to the Acid Rain portion of the operating permit may be processed as an administrative amendment.

III. Modeling

The Voluntary Emissions Reduction Agreement results in a decrease in SO₂ emissions, therefore, no modeling is required for such a modification.

IV. Discussion of Modifications Made

Source Requested Modifications

The Division addressed the source's requested modifications as follows:

Voluntary Emissions Reduction Agreement

The Voluntary Emissions Reduction Agreement specifies (in paragraph 11.(a)) that within one (1) year of the compliance date (January 1, 2003), PSCo shall apply for modifications of the Title V permits issued to the Denver Metro Area

Facilities and that the applications shall include only the appropriate provisions contained in the agreement concerning emission limitations, recordkeeping, reporting and regulatory assurance, all as State-Only conditions. Therefore, the Division has included the following sections of the Voluntary Emissions Reduction Agreement in the operating permit as State-Only conditions: paragraphs 2, 5 and 7. Note that the procedure for determining the percent reduction (exhibit A of the agreement) will be included in Appendix G of the permit.

Although the Voluntary Emissions Reduction Agreement does not specify that any definitions be included in the operating permit, the Division considers that the definitions used in paragraphs 2, 5 and 7 should be included in the operating permit so that the conditions may be more clearly understood.

It is not clear whether the agreement intended that the Nitrogen Oxides requirements (paragraph 3, retire Arapahoe Units 1 and 2) be included in the operating permit. The requirement to retire Units 1 and 2 was included in Colorado Regulation No. 1 and was included in the original operating permit issued for Arapahoe station. By including the requirement to retire Units 1 and 2 in Colorado Regulation No.1, the requirement to retire the units becomes a state and federally enforceable requirement. However, since the Voluntary Emissions Reduction Agreement includes language specific for any future netting analysis that was not included in Colorado Regulation No. 1, the Division considers that the language in the Voluntary Emissions Reduction Agreement should be included in the permit as a state-only requirement.

In addition, in order to meet the Voluntary Emissions Reduction Agreement, a dry sodium injection system was added to Unit 3 to reduce SO₂ emissions. This system became operational in January 2003. Therefore, the permit will be revised to indicate that Unit 3 is equipped with a dry sodium injection system to control SO₂ emissions.

Acid Rain Provisions

The Division revised the NO_x averaging plan in Section III of the permit as indicated in the source's submittal received on December 11, 2002.

In addition, the Division revised the designated representative in Section III of the permit. Note that the source submitted copies of the revised Certificate of Representation Forms to the Division on June 19, 2003.

In addition, the source submitted retired unit exemption forms for Units 1 and 2 on December 10, 2002. Under the provisions in 40 CFR Part 72 § 72.8(b)(3), upon submittal of the retired unit exemption notice, the permitting authority shall revise the Title V operating permit and include the provisions in 40 CFR Part 72 §§ 72.8(b)(1) and (d). Therefore, these provisions have been included in the permit.

Accidental Release Prevention Requirements (112(r))

In their September 22, 2003 comments on the draft modified operating permit, the source indicated that the facility was no longer subject to the requirements of 112(r), since liquid SO₂ was no longer stored and used at the facility and requested that the Division revise the language in Section I, Condition 4.1 ("old" Condition 3.1) to reflect this.

Monitoring for the 20% SO₂ Reduction Requirement on Unit 4

In their September 22, 2003 comments on the draft modified operating permit, the source also requested that the monitoring language in Condition 1.3.3 (20% sulfur dioxide reduction requirement for Unit 4) be revised. Compliance with the percent reduction requirement is based on the difference between the inlet and outlet SO₂ emission rate (in lbs/mmBtu). The current language requires the source to determine the outlet SO₂ emission rate by dividing the outlet SO₂ emissions (tons/yr) by the annual heat input (mmBtu/yr) based on fuel sampling.

Since the outlet SO₂ emission data is taken from the continuous emission monitoring system, the source indicated that it is incorrect to calculate the emission rate by dividing by the heat input based on fuel sampling and that it makes more sense to calculate the emission rate by dividing by the heat input determined by the continuous emission monitoring system. The Division agrees and has revised the monitoring language as requested.

Since the heat input for the outlet SO₂ emission rate is based on the CEMS data, it is not necessary to determine the heat input from gas via fuel sampling. Therefore Condition 2.8 was removed from the permit.

In addition, the source has indicated that they would calculate the inlet SO₂ emission rate (lbs/mmBtu) using AP-42 emission factors, rather than follow the method for calculating the inlet SO₂ emission rate as specified in the current permit. The current permit allows the inlet SO₂ emission rate to be based on the sulfur content of the coal, as determined by fuel sampling. Under this method, if the calculated percent reduction is 35% or less, then the source would need to calculate the percent reduction using AP-42 emission factors. The permit has been modified to require that the inlet SO₂ emission rate be based on the AP-42 emission factor.

Lead Emission Calculations and Fuel Sampling for Lead

In their September 22, 2003 comments on the draft modified operating permit, the source requested that the requirement to calculate emissions of lead be removed (Section II, Condition 13.2), since emissions are calculated solely for APEN reporting requirements and since Section II, Condition 15 indicates that for emission units that are subject to APEN reporting requirements only, the emission factors or emission calculation methodology may be revised without revising the permit. Although the Division agrees that Condition 15 of the permit clearly indicates that no permit modification is required to change the emission

calculation methodology for an emission unit that is only subject to APEN reporting requirements, it has been the Division's policy to include such calculation methodology in the permit. Therefore, the Division did not remove Condition 13.2, but revised the language to indicate that the source would determine and report lead emissions for APEN reporting purposes based on the calculation methodology and emissions reported in their annual Toxic Release Inventory (TRI) report.

Since the permit no longer requires that the lead emission calculations use the lead content of the coal, the requirement to sample coal for the lead content in Conditions 1.7 and 14 have been removed.

Other Modifications

In addition to the requested modifications made by the source, the Division used this opportunity to include changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this modification.

The Division has made the following revisions, based on recent internal permit processing decisions and EPA comments on other permits, to the Arapahoe Station Operating Permit with the source's requested modifications. These changes are as follows:

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Added language specifying that the semi-annual reports and compliance certifications are due in the Division's office and that postmarks cannot be used for purposes of determining the timely receipt of such reports/certifications.

Changed the Responsible Official.

Section I – General Activities and Summary

Removed Units 1 and 2 from the description in Condition 1.1 and removed them from the table in Condition 4.1.

Revised Condition 1.1 to indicate that a dry sodium injection system was added to Unit 3 to control SO₂ emissions and was first placed in service in January 2003. In addition, corrected the description of the control device for Unit 4 to indicate a "dry sodium injection system" rather than a "dry scrubber". These same changes were made to the table in Condition 4.1.

Revised the language in Condition 1.1 regarding the attainment status of the Denver metro area.

Removed the language in Condition 1.6 addressing Non-Attainment Area major

New Source Review (NSR). Since the Denver metro area is no longer a non-attainment area, these provisions do not apply. In addition, this condition was moved to the “new” section 3 for PSD (see below).

Removed references to Units 1 and 2 in Condition 2 (Alternative Operating Scenarios).

Added a “new” Section 3 for Prevention of Significant Deterioration and moved Condition 1.6 into this section as Condition 3.2.

Added a “new” Section 5 for Compliance Assurance Monitoring (CAM) Requirements. Note that although there are emission units that will be subject to CAM requirements, these requirements do not apply until the permit is renewed.

Section II – Specific Emission Units

Sections II.1 thru 3 – Boilers

Removed Units 1 and 2 from the table titles.

Conditions 1.8 and 2.11 specify that Units 1 and 2 will be retired by January 1, 2003. This condition was moved and added to a separate section of the permit (Section II, Condition 17) addressing the appropriate requirements for the retirement of these units. Note that the language in Conditions 1.8 and 2.11 states that this requirement applies upon EPA’s approval of the designation of the Denver metro area as attainment/maintenance for PM₁₀. EPA has approved this designation in volume 67, No. 179 of the Federal Register, dated September 16, 2002. The re-designation became effective on October 16, 2002. Therefore, the language regarding EPA’s approval will be removed.

Removed conditions 1.1.2 and 1.1.3 and the note under Condition 1.1.4, as these are all related to Units 1 and 2. Removed the designation for Units 3 and 4 for performance testing (Condition 1.1.1) and baghouse maintenance and operation (Condition 1.1.4), since it is no longer necessary.

Removed the equations to calculate emissions from Units 1 and 2 from Condition 1.2 and the notes related to Units 1 and 2 control devices. Also removed the designation for Units 3 and 4 on the equations, since it is no longer necessary.

Conditions 1.3.2 and 2.3.2 (Reg 1 SO₂ limit) includes language that states that this requirement applies upon EPA’s approval of the designation of the Denver metro area as attainment/maintenance for PM₁₀. As discussed above, the Denver metro area has been re-designated as attainment/maintenance, therefore, this language was removed.

Removed the notes from Condition 2.2 regarding Units 1 and 2 and removed the designation for Units 3 and 4, since it is no longer necessary.

Section II.4 – Air Compressor Engine

Removed the emission limits for PM, PM₁₀, SO₂ and VOC, since they are below the APEN de minimis levels. With the re-designation of the Denver metro area as attainment/maintenance, the APEN de minimis level became 2 tons/yr. Added the phrase “as modified under the provisions of Section I, Condition 1.3” to the construction permit citation to indicate that the underlying construction permit was revised in the operating permit.

Section II.5 – Fugitive Particulate Matter Emissions

Changed the reference to “Condition 21” to “Condition 22” in Condition 5.1. The renumbering change is necessary due to the addition of the Common Provisions requirements in the General Conditions of the permit.

Removed the requirement to certify semi-annually that control measures are utilized to reduce fugitive particulate matter emissions from Condition 5.2. This language implies that a separate certification is required semi-annually. However, the Division had intended that the certification with the semi-annual monitoring reports be used to indicate whether adequate control measures are used to minimize fugitive particulate matter emissions.

Section II.6 – New Rail Car Unloading Station

Removed the requirement to certify semi-annually that the listed control measures are utilized to reduce fugitive particulate matter emissions from Condition 6.4, for the reasons discussed above under Section II.5.

Section II.7 – Particulate Matter Emissions – Point Sources

Revised the equations in Condition 7.1.1 to calculate emissions in tons/mo, rather than lbs/mo.

Section II.8 – Cooling Towers

Revised the equations in Condition 8.1 to calculate emissions in tons/mo, rather than lbs/mo.

Section II.9 – Safety Kleen Cold Cleaner Solvent Vats

When the original permit was issued for this facility, cold cleaner solvent vats that met the definition of small remote reservoir units could take the APEN exemption even though the solvent vats were subject to specific requirements in Reg 7. The cold cleaner solvent vats that did not meet the definition of small remote reservoir units could not take the APEN exemption. Therefore, there were two scenarios, one for cold cleaner solvent vats that were small remote reservoir units (no APEN reporting requirements) and those that weren't (subject to APEN

reporting requirements). Revisions were made to the “catch-all” provisions in Regulation No. 3 and those revisions became effective on December 30, 2002. With these revisions, an emission unit that is subject to specific Regulation No. 7 requirements can take the APEN and construction permit exemptions. However, an emission unit that is subject to specific Regulation No. 7 requirements cannot be considered an insignificant activity. Therefore Section II.9 was revised to include only one table and to include only the specific Reg 7 requirements (work practice standards and transfer and storage of waste/used solvents).

Section II.10 – Particulate Matter Emission Periodic Monitoring Requirements

Removed Condition 10.4, since Units 1 and 2 are retired the provisions for operating and maintaining electrostatic precipitators is no longer necessary.

Section II.11 – Continuous Emission Monitoring and Continuous Opacity Monitoring Systems

Revised the language in Condition 11.3.2 to indicate that for purposes of monitoring compliance with the Reg 1 SO₂ limit, that hourly SO₂ data be converted to lbs/mmBtu based on Method 19, since Part 75 does not require that hourly SO₂ data be reported in units of lbs/mmBtu.

Section II.12 – Opacity Requirements and Periodic Monitoring

Removed the “Note” included with the Reg 1, Section II.A.1 opacity limit (Condition 12.1), since the Division considers that this note is no longer necessary.

Section II.13 – Lead Periodic Monitoring

Removed the note for Units 1 and 2 in condition 13.2 and removed the designation for Units 3 and 4, since it is no longer necessary.

Section IV – Permit Shield

The citation for the permit shield is incorrect. The reference to Part A, Section I.B.43 should be Part A, Section I.B.44 and the reference to Part C, Section XIII should be Part C, Section XIII.B.

Based on comments made by EPA on another permit, the following statement was added to the end of the introductory paragraph in Section 1 “In addition, this shield does not protect the source from any violations that occur as a result of any modification or reconstruction on which construction commenced prior to permit issuance”.

Section V – General Conditions

Revisions were made to the Common Provisions Regulation (general condition

3), effective September 30, 2002. The appropriate revisions were made to the language in the permit.

The citation in General Condition 16 (open burning) was revised. The open burning requirements are no longer in Reg 1 but are in new Reg 9. In addition, changed the reference in the text from "Reg 1" to "Reg 9".

Corrected the reference to "Condition 21.d" in Condition 21 to "Condition 22.d". This change should have been made when the general provisions were added as Condition 3.

Appendices

Revised the description of the insignificant activity category for the emergency power generators (Reg 3, Part C, Section II.E.3.nnn).

Removed Units 1 and 2 from the tables in Appendices B and C.